

Recent Papers by IBM Authors

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• Journals

Atomic Absorption Analysis of Ferrites, S. L. Levine (SDD Poughkeepsie), *Analytical Chemistry* **40**, No. 8, (July, 1968).

Magnetic and Optical Properties of Cobalt-Substituted $RnNiF_3$, J. C. Suits, T. R. McGuire and M. W. Shafer, (RES Yorktown Hts.), *Applied Physics Letters* **12**, No. 12, 406-409 (June 15, 1968).

Interelemental and Anionic Interferences in Atomic Absorption Spectroscopy, W. Reuter (RES Yorktown Hts.), *Applied Spectroscopy* **21**, No. 6, 392-393 (November/December, 1967).

Preliminary Investigation of Techniques for Automated Reading of Unformatted Text, G. Nagy (RES Yorktown Hts.), *Communications of the ACM* **11**, No. 7, 480-487 (July, 1968). Author currently at U. of Montreal.

Design of an Asynchronous Main Storage Central Processing Unit and Interface, D. E. Waldecker (FSD Owego), *Computer Design* **7**, No. 6, 60-63 (June, 1968).

Progress in Mass Storage, A. S. Hoagland (RES Yorktown Hts.), *Computer Group News* **1**, No. 7, 5-6 (July, 1967).

Environmental Effects on Chemically Vapor Plated Silicon Dioxide, S. Krongelb (RES Yorktown Hts.), *Electrochemical Technology* **6**, No. 7, 251-256 (July/August, 1968).

Connector Spotlight; a Second-Level Interconnection Scheme, W. R. Maclay (FSD Owego), *Electronic Packaging and Production* **8**, No. 6, 173-179 (June, 1968).

Adding Offset to Test-Signal Sources, P. E. Stuckert (RES Yorktown Hts.), *Electro-Technology* **81**, No. 3, 93-94 (March, 1968).

The Audit Pick Program, W. F. Stuhldreher (FSD Huntsville), *Federal Account* **17**, No. 2, 65-71 (June, 1968).

Pneumatic Digital Control of a Synchronous Device, D. F. Jensen (SDD Endicott), H. R. Muller (RES Zürich) and R. R. Schaffer (SDD Endicott), *Fluidics Quarterly* **1**, pp. 27-37 (1968).

Magnetic Properties of $NaCrS_2$, K. W. Blazey and H. Rohrer (RES Zürich), *Helvetica Physica Acta* **41**, No. 4, 391-392 (July 1, 1968).

Paramagnetic Resonance of Cr^{3+} in the Layer Structure of $NaInS_2$, K. A. Müller, W. Berlinger, R. Meli (RES Zürich) and C. Schueler (Brown, Boveri and Cie, Dättwil, Switz.), *Helvetica Physica Acta* **41**, No. 4, 392 (July 1, 1968).

Abweichungen vom Ohmschen Gesetz in Halbleitern (Deviations from Ohm's Law in semiconductors), R. Jaggi (RES Zürich), *Helvetica Physica Acta* **41**, No. 4, 405 (July 1, 1968).

Lattice-Dynamical and Chemical Bonding Aspects of Antiferroelectric $PbZrO_3$, M. Multani (Physik-Institut der Universität Zürich) and K. A. Müller (RES Zürich), *Helvetica Physica Acta* **41**, No. 4, 407 (July 1, 1968).

Avoiding Deadlock in Multitasking Systems, J. W. Havender (SDD Poughkeepsie), *IBM Systems Journal* **7**, No. 2, 74-84 (1968).

Statistics Gathering and Simulation for the Apollo Real-Time Operating System, W. I. Stanley and H. F. Hertel (FSD Houston), *IBM Systems Journal* **7**, No. 2, 85-102 (1968).

Turnaround Time for Messages of Differing Priorities, C. Hauth (DPD Poughkeepsie), *IBM Systems Journal* **7**, No. 2, 103-122 (1968).

Hierarchical Control Programs for Systems Evaluation, D. D. Keeffe (DPG Endicott), *IBM Systems Journal* **7**, No. 2, 123-133 (1968).

Electrical Model of the Injection Laser, F. Stern (RES Yorktown Hts.), *IEEE Journal of Quantum Electronics* **QE-4**, No. 4, 131 (April, 1968).

Noncatastrophic Degradation of GaAs Lasers Under CW Operations, K. L. Konnerth and J. C. Marinace (RES Yorktown Hts.), *IEEE Journal of Quantum Electronics* **QE-4**, No. 4, 173-175 (April, 1968).

Four-Wave Parametric Interaction in Potassium Vapor, O. J. Lumpkin (RES Yorktown Hts.), *IEEE Journal of Quantum Electronics* **QE-4**, No. 4, 226-229 (April, 1968).

An Autonomous Reading Machine, R. G. Casey and G. Nagy (RES Yorktown Hts.), *IEEE Transactions on Computers* **C-17**, No. 5, 492-503 (May, 1968).

High-Speed Binary-to-Decimal Conversion, M. S. Schmoockler (SDD Poughkeepsie), *IEEE Transactions on Computers*, C-17, No. 5, 506-508 (May, 1968).

Approximating Discrete Probability Distributions with Dependence Trees, C. K. Chow and C. N. Liu (RES Yorktown Hts.), *IEEE Transactions on Information Theory* IT-14, No. 3, 462-467 (May, 1968).

Time-Base Circuit for Sampling Scope, R. E. Lüscher (RES Zürich), *IEEE Transactions on Instrumentation and Measurement* IM-17, No. 2, 111-115 (June, 1968). Author currently at Hewlett-Packard Company, Colorado Springs.

Induced Anisotropy in Ni-Fe Films, J. C. Slonczewski (RES Yorktown Hts.), *IEEE Transactions on Magnetics* MAG-4, No. 1, 15-19 (March, 1968).

Ferrite Memory Systems, R. M. Whalen, L. A. Russell (SDD Poughkeepsie) and H. O. Leilich (Technische Hochschule Braunschweig), *IEEE Transactions on Magnetics* MAG-4, No. 2, 134-145 (June, 1968).

Nth-Order Autocorrelations in Pattern Recognition, J. A. McLaughlin and J. Raviv (RES Yorktown Hts.), *Information and Control* 12, No. 2, 121-142 (February, 1968).

File Organization Schemes Based on Finite Geometries, C. T. Abraham, S. P. Ghosh and D. K. Chaudhuri (RES Yorktown Hts.), *Information and Control* 12, No. 2, 143-164 (February, 1968).

A Generalized Firing Squad Problem, F. R. Moore and G. G. Langdon (SDD Endicott), *Information and Control* 12, No. 3, 212-220 (March, 1968).

IBM's Records Roundup, J. C. Connelly (FSD Owego), *Information and Records Roundup* 2, No. 5, 33-35 (June/July, 1968).

Mechanism of the Photochemical Valence Tautomerization of 1, 3-Butadiene, R. Srinivasan (RES Yorktown Hts.), *Journal of the American Chemical Society* 90, No. 16, 4498-4499 (July 31, 1968).

Effect of Numerical Aperture of Microscope Objectives on Film Thickness Determination, W. A. Pliskin and R. P. Esch (CD E. Fishkill), *Journal of Applied Physics* 39, No. 7, 3274-3276 (June, 1968).

Vapor-Phase Photochemistry of Furfural, H. Hiraoka and R. Srinivasan (RES Yorktown Hts.), *Journal of Chemical Physics* 48, No. 5, 2185-2189 (March 1, 1968).

Characterizing Derivation Trees of Context-Free Grammars Through a Generalization of Finite Automata Theory, J. W. Thatcher (RES Yorktown Hts.), *Journal of Computer and System Sciences* 1, No. 4, 317-322 (December, 1967).

Anodic Dissolution of Heavily Doped N-Type Ge in Aqueous Solutions, R. Gereth (AEG Telefunken Lab, Heilbronn) and M. E. Cowher (RES Yorktown Hts.), *Journal of the Electrochemical Society* 115, No. 6, 645-649 (June, 1968).

The Influence of Thermal SiO₂ Surface Constitution on the Adhesion Performance of Photo Resists, R. O. Lussow (CD E. Fishkill), *Journal of the Electrochemical Society* 115, No. 6, 660-664 (June, 1968).

Scanning Electron Microscopy of Twin Structures in Silicon Web Dendrite Crystals, G. H. Schwuttke and E. K. Brandis (CD E. Fishkill), *Journal of the Electrochemical Society* 115, No. 6, 669-671 (June, 1968).

The Synthesis and Epitaxial Growth of GaP by Fused Salt Electrolysis, J. J. Cuomo and R. J. Gambino (RES Yorktown Hts.), *Journal of the Electrochemical Society* 115, No. 7, 755-759 (July, 1968).

Intrinsic Stress in Evaporated Metal Films, E. Klokholm and B. S. Berry (RES Yorktown Hts.), *Journal of the Electrochemical Society* 115, No. 8, 823-826 (August, 1968).

Formation of Thick Semi-Insulating GaAs Films by Flash Evaporation, T. B. Light, E. M. Hull (RES Yorktown Hts.) and R. Gereth (AEG Telefunken Lab., Heilbronn), *Journal of the Electrochemical Society* 115, No. 8, 857-860 (August, 1968).

Phase-Integral Approximation in Momentum Space and the Bound States of an Atom, M. C. Gutzwiller (RES Watson Lab., New York), *Journal of Mathematical Physics* 8, No. 10, 1979-2000 (October, 1967).

The Low Temperature Magnetic Susceptibility of Ceruloplasmin, P. Aisen, S. H. Koenig and H. R. Lilienthal (RES Watson Lab, New York), *Journal of Molecular Biology* 28: No. 2, 225-231 (September 14, 1967).

A Graphical Method for Television Legibility Analysis, (Part I), C. K. Clauer (ASDD Los Gatos), *Journal of the SMPTE* 77, No. 7, 714-717 (July, 1968).

Effect of Oxygen on the RF Sputtering Rate of SiO₂, R. E. Jones (CD E. Fishkill), H. F. Winters (RES San Jose) and L. I. Maissel (CD E. Fishkill), *Journal of Vacuum Science and Technology* 5, No. 3, 84-87 (May/June, 1968).

Pick Right Organic Coating to Insulate Printed Circuits, C. R. Hawkins (SDD San Jose), *Materials Engineering* 67, No. 6, 76-77 (June, 1968).

Über die Eignung verschiedener Einschlubmittel für Dauerpräparate von Kunststoff-Dünnschnitten (On the suitability of various mounting media for permanent mounts of plastic thin films), M. Schrader and U. Weber (SMD Sindelfingen), *Mikroskopie* 22, No. 7/8, 199-204 (April, 1968).

Pilot Study of a CAI Laboratory in German, H. W. Morrison (U. of N. Y. at Stony Brook) and E. N. Adams (RES Yorktown Hts.), *Modern Language Journal* L11, No. 5, 287-297 (May, 1968).

The New Standard Photomasking Terminology, J. E. Levine (CD E. Fishkill), *Photo Chemical Fabrication* 1, No. 1, 18 ff. (June, 1968).

g₁ Factor of the Lowest ³¹P₁ and ³¹P₂ States of Ba; Level-Crossing Determination of A(³¹P₁) u.g.(³¹P₁) of Hg¹⁰⁰, M. W. Swagel and A. Lurio (RES Watson Lab., New York),

Physical Review **169**, No. 1, 114-119 (May 5, 1968). MWS now at Electro-Optical Systems, Inc., 300 North Halstead Avenue, Pasadena, Cal.

Resistive States in High-Field Type-II Superconductors, K. Maki (RES Zürich), *Physical Review* **169**, No. 2, 381-387 (May 10, 1968). Author currently at Tôhoku U., Sendai, Japan.

Transport Properties of Electrons in Inverted Silicon Surfaces, F. F. Fang and A. B. Fowler (RES Yorktown Hts.), *Physical Review* **169**, No. 3, 619-631 (May 15, 1968).

Excitation Spectra and Quantum Efficiency of GaP Containing Zn and O, B. Welber and T. N. Morgan (RES Yorktown Hts.), *Physical Review* **170**, No. 3, 767-770 (June 15, 1968).

Effective-Spin Hamiltonian for "Non-Kramers" Doublets, K. A. Müller (RES Zürich), *Physical Review* **171**, No. 2, 350-354 (July 10, 1968).

Magnetoelastic Behavior of Single-Crystal Europium Oxide, Part II, Magnetostriction, B. E. Argyle (RES Yorktown Hts.) and N. Miyata (Yokohama National U., Minamiku, Yokohama, Japan), *Physical Review* **171**, No. 2, 555-562 (July 10, 1968).

Diffusion of Quasiparticles in Superconducting Aluminum Films, S. Y. Hsieh (Columbia U.) and J. L. Levine (RES Yorktown Hts.), *Physical Review Letters* **20**, No. 26, 1502-1504 (June 24, 1968).

Giant Faraday Rotations in Self-Induced Transparency, E. Courtens (RES Zürich), *Physical Review Letters* **21**, No. 1, 3-5 (July 1, 1968).

Analysis and Improvement of Photostore Error Rates, R. T. Chien (U. of Ill.), D. T. Tang, E. S. Barrekette and A. M. Katcher (RES Yorktown Hts.), *Proceedings of the IEEE* **56**, No. 5, 805-812 (May, 1968).

Vision and Lasers, (Abstract), W. L. Makous (U. of Wash.) and J. D. Gould (RES Yorktown Hts.), *Psychonomic Science* **11**, No. 10, 358 (1968).

Multiplier, Accelerator, and Liquidity Preference in the Determination of National Income in the United States, G. C. Chow (RES Yorktown Hts.), *Review of Economics and Statistics* **49**, No. 1, 1-15 (February, 1967).

Nanosecond Microscopic Kerr Magneto-Optic Apparatus and Measurement Techniques, E. R. Genovese and H. Chang (RES Yorktown Hts.), *Review of Scientific Instruments* **39**, No. 5, 733-741 (May, 1968).

Anti-Ballistic-Missile Systems, R. L. Garwin (RES Watson Lab., New York) and H. A. Bethe (Cornell U.), *Scientific American* **218**, No. 3, 21-31 (March, 1968).

Process Analysis of Mask Making, J. E. Levine (CD E. Fishkill), *Solid State Technology* **11**, No. 7, 34-38 (July, 1968).

Initial Field Evaporation of Platinum Surfaces in the Field Ion Microscope, C. A. Speicher and W. T. Pimbley (SDD Endicott), *Surface Science* **10**, 470-473 (June, 1968).

The Evaluation of Thin Film Insulators, W. A. Pliskin (CD E. Fishkill), *Thin Solid Films* **2**, No. 1, 1-26 (July, 1968).

Reducing Wear in an Electromagnetic Clutch, R. Kilburn (SDD Endicott), *Transactions of the ASME, Journal of Engineering for Industry* **90**, No. 2, 308-316 (May, 1968).

On the Structure of Aluminum Films, F. d'Heurle, L. Berenbaum and R. Rosenberg (RES Yorktown Hts.), *Transactions of the Metallurgical Society of AIME* **242**, No. 3, 502-511 (March, 1968).

Formation of Phosphosilicate Glass Films on Silicon Dioxide, J. M. Eldridge and P. Balk (RES Yorktown Hts.), *Transactions of the Metallurgical Society of AIME* **242**, No. 3, 538-545 (March, 1968).

Factor Analysis in Hydrology—an Agnostic View, J. R. Wallis (RES Yorktown Hts.), *Water Resources Research* **4**, No. 3, 521-527 (June, 1968).